



U.S. Application N . 10/680,377

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 10/680,377
Filed: October 7, 2003
Applicant: Peng Lee
Title: TERMITE ACOUSTIC DETECTION

INFORMATION DISCLOSURE STATEMENT

Mail Stop: DD
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant hereby submits an information disclosure statement and an accompanying Information Disclosure Citation form (PTO-1449). The prior art references are as follows:

Document AA – U.S. Patent No. 4,809,554 discloses an apparatus and method for detecting insects detects insects by detecting ultrasonic signals which are generated by mechanical disturbances in material on which insects are feeding caused by the insects feeding on the material.

Document BB – U.S. Patent No. 4,941,356 discloses the process of detecting the presence of insects or insect larvae in a solid substrate, e.g. wood, in which the behavioral patterns of the insects to be detected are established. These behavioral patterns are compared to actual noise and vibration patterns detected in the substrate, after extraneous noise is filtered from the actually detected information and the data has been converted to analog form. The actual analysis is performed by a microcomputer. The microcomputer analysis yields an output indicative of damage or movement activity or lack of such activity.

Document CC – U.S. Patent No. 5,285,688 discloses a system for detecting wood-destroying insects by sensing acoustic emissions generated by the insects as they feed. The

system comprises two acoustic emission sensors, an amplification section, a signal processing section and an indicator section. The system comes into mechanical contact with the wood to be inspected through the use of a bolt which is inserted into the wood and attaches to an acoustic emission sensor or through the use of an adhesive layer which directly attaches an acoustic emission sensor to the wood. The acoustic emission sensors are electrically connected to the amplification section which is electrically connected to the signal processing section. The signal processing section is capable of distinguishing between insect-caused acoustic emissions and noise-caused acoustic emissions detected by the acoustic emission sensors. The results of the signal processing section are sent to the indicator section.

Document DD – U.S. Patent No. 5,571,967 discloses the termite detecting device is placed in an expected invading passage for detecting damage or destruction caused by termites. One configuration of the device includes: a detecting wood sample for attracting termites; a detecting terminal being pressed against the detecting wood sample while the detecting wood sample is supplied with water as required; and a magnetic circuit capable of being opened and closed by the movement of the detecting terminal. When the detecting wood sample is eaten and damaged by termites and becomes fragile, the detecting terminal sinks into the detecting wood sample by virtue of a pressing force and the magnetic circuit is made open. As a result, the device detects the existence of termites. Alternatively, another configuration of the termite detecting device detects vibrations caused by termites so as to detect the invasion of termites. In either device, when a valid signal from a magnetic sensor or a vibration sensor is issued, an indicator disposed in a house is activated to warn in response to the sensor signal. Alternatively the valid signal is transmitted by way of telephone line, etc., to a control center. Thus, the device warns the user of the invasion by termites in an early stage so that the user may take a quick action.

Document EE – U.S. Patent No. 5,592,774 discloses the present invention relates to a method and system for use in determining the presence of termites and controlling termite population. The system and method utilized changes in, for example, conductivity, as a method of determining termite activity

Document FF – U.S. Patent No. 5,815,090 discloses materials and methods useful for monitoring and management of certain pests well as other biotic and abiotic factors. The invention is particularly well suited for the control of social insect pests, and particularly, termites. The invention concerns methods and apparatuses for monitoring pest activity and presenting a toxicant. The invention is useful as part of an Integrated Pest Management Program and can significantly enhance the efficacy, efficiency and convenience of the management program

Document GG – U.S. Patent No. 5,877,422 discloses In order to provide a termite detection apparatus that is capable of detecting an infestation of termites in a reliable manner and a termite alarm unit that employs this termite detection apparatus, the termite detection apparatus according to the present invention comprises a sensor section. The sensor section comprises a case, an attractant member provided inside the case and a detection portion provided with a for detection mechanism where the attractant member is provided to detect termites that have entered, attracted by the attractant member. The termite detection apparatus also includes a sensor cover enclosing an area around the sensor section. In addition, the termite alarm unit gathers termite detection signals sent from a plurality of such termite detection apparatuses at a relay device, sends the termite detection signals gathered at the relay device to an alarm section as a termite presence signal so that a warning can be issued to the resident with a voice produced at an audio alarm section and with a visual indication made at a visual alarm section.

Document HH – U.S. Patent No. 6,052,066 discloses materials and methods useful for monitoring and management of certain pests well as others biotic and abiotic factors. The invention is particularly well suited for the control of social insect pests, and particularly, termites. The invention concerns methods and apparatuses for monitoring pest activity and presenting a toxicant. The invention is useful as part of an Integrated Pest Management Program and can significantly enhance the efficacy, efficiency and convenience of the management program.

Document II – U.S. Patent No. 6,081,481 discloses a method for detecting the seismic discontinuity in acoustic impedance caused by an acoustically hard, reflective object buried a few feet below poroelastic soil using seismic activity induced through acoustic coupling with a remote sound source. The abrupt change in the soil impedance caused by the buried object causes sound to reflect between the object and the surface and increase the amplitude of the seismic vibrations induced by the incident acoustic energy. The change in the seismic displacement of the soil is on the order of angstroms which can be detected using remote optical test equipment such as a laser-doppler vibrometer (LDV) commonly used in nondestructive testing. A sound source emits sound at frequencies that induce significant seismic coupling with the poroelastic soil. Part of a beam of laser light of an LDV is scanned over the ground. The laser light is shifted in frequency from its source frequency by an amount intended to approximate the frequency of the anticipated seismic vibrations. The seismic vibrations of the soil frequency modulate the laser light to form upper and lower side bands. The amplitude of the side bands increases in the presence of an acoustically hard object due to the greater seismic vibrations over the acoustically reflecting surface. Laser light that is scattered back is combined with unshifted laser light in the photodetector of the LDV so as to eliminate the optical frequency effects of the laser and to cause the carrier frequency and side bands to emerge as distinct signals.

Document JJ – U.S. Patent No. 6,150,944 discloses a system comprising a sensor and associated microprocessor to detect the presence of gases emitted by termites. The processor relays a signal to an appropriate output device to alert a user that the system has detected the presence of termites.

Document KK – Japanese Patent No. H07-143837 discloses Japanese Patent No. H07-255344 discloses a device to surely eliminate the maloperation due to a small animal which is other than termites and does not eat a substance for sensing so as to sense the vibration produced when the termites are eating the substance such as wood for sensing that is a favorite bait substance. This sensor for termites is obtained by equipping a sensor body 1 with a setting means for setting a substance such as wood 6 willingly eaten by the termites near an intruding

passage of the termites and a sensing means for sensing the vibration produced by eating of the substance with the termites using a vibration sensor 5.

Document LL – Japanese Patent No. H07-143837 discloses a system to provide the subject system consisting of such a specific scheme as to transducer the living sound of termite into electric signals, thus capable of easily catching termite living status and also of realizing early detection of the damages due to termite by its installation in buildings. Firstly, the living sound of termite is transduced by two acoustic sensors 1, 1 into electric signals which are then inputted into an operational processor 3 where an operational processing is made to determine the difference between the two signals. Second, the signals subjected to operational processing are inputted into a comparator 5. Among these signals, those exceeding a specified threshold value are outputted as termite detection signals. Furthermore, these signals are sent, e.g. via a level transducer 6 and an event counter 7, to a display assessment section 8 where an assessment processing is conducted by a microprocessor 12, and the assessment of termite living status is ensured to inform through an event buzzer 13, a display device 15, etc.

Respectfully submitted,

BUTLER, SNOW, O'MARA, STEVENS &
CANNADA PLLC

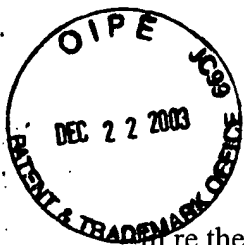
12-19-03
Date

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as priority class mail, postage prepaid, on 12-19-03 in a package addressed to: Mail Stop: DD, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Lori L. Wood
Lori L. Wood



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Peng Lee

Serial No.: 10/680,377

Filed: October 7, 2003

For: TERMITE ACOUSTIC
DETECTION

Attorney Docket No.: 026018.46631

TRANSMITTAL LETTER

Mail Stop: DD
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The following documents for the above-captioned application are enclosed herewith:

1. Information Disclosure Statement;
2. Information Disclosure Citation (PTO-1449); and
3. Return Postcard.

If you have any questions, please contact me.

Respectfully Submitted,

Butler, Snow, O'Mara, Stevens
& Cannada, PLLC

Date:

12-19-03

By:

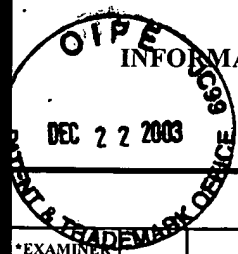
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INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Docket Number (Optional)

026018.46631

Application Number

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Applicant(s)

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Filing Date

October 7, 2003

Group Art Unit

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL	REF	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	AA	4,809,554	03/07/89	Shade et al.	73/587	367/136	11/25/87
	BB	4,941,356	07/17/90	Michael Pallaske	73/587		10/28/88
	CC	5,285,688	02/15/94	Robbins et al.	73/587		09/17/92
	DD	5,571,967	11/05/96	Tanaks et al.	73/587	73/81	07/06/94
	EE	5,592,774	01/14/97	Stanley Gaylon	43/124	43/131	02/10/94
	FF	5,815,090	09/29/98	Nan-Yao Su	340/870.1	340/573	10/31/96
	GG	5,877,422	03/02/99	Hiroataka Otomo	73/587	43/124	06/28/96
	HH	6,052,066	04/18/00	Nan-Yao Su	340/870.1	340/573	09/25/98
	II	6,081,481	06/27/00	Sabatier et al.	367/8	73/604	04/17/87
	JJ	6,150,944	11/21/00	Martin et al.	340/632	340/573.1	07/15/99

FOREIGN PATENT DOCUMENTS

	REF	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							YES	NO
	KK	H07-143837	06/06/95	Japan	A01M		✓	
	LL	H07-255344	09/10/95	Japan	A01M		✓	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP Section 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.